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Date: 6/7/2005 4:17:51 PM
Subject: Castro Adobe CEQA Review

I would like to register my strong objection to the seismic stabilization scheme that has been proposed by WJE for the Rancho San Andreas Castro Adobe in Watsonville, CA, and as outlined in the Seismic Stabilization Draft IS/MND. The Mitigation Cult-3 is not what was recommended in the HSR, and in my opinion, the "center core" system (read that: 6-inch reinforced concrete columns 3 to 4 feet on center) that is being proposed is a step backward to a time in the 1970s when the retrofit of historic adobes was based on providing a separate, independent structure to carry roof and floor loads in the event that the adobe walls crumbled and failed. This 1970s concept has the distinction of being extremely destructive of the historic fabric (i.e., it removes a massive amount of historic fabric). The prime example of this philosophy was the seismic retrofit in 1977 of the Cooper-Molera adobe in Monterey, CA, in which much of the wall material was destroyed during the retrofit by cutting chases into the walls to hide an independent concrete frame in one building and a steel frame in another.

The philosophy has changed considerably since then, with the introduction of the SHBC in 1985, and the testing of adobe structures on the shake tables of both Berkeley's Richmond Field Station in the 1980s (NSF) and Stanford's John Blume Center (GSAP) in the 1990s. We no longer see the need to destroy a portion of the building in order to save it. The concept of "stability-based" retrofit design was first tested on the shake table at Berkeley in the mid 1980s. It was further refined using minimally invasive systems tested at Stanford University and the Institute of Earthquake Engineering and Seismology in Skopje, Republic of Macedonia in the 1990s. The concept was "minimal intervention", including such things as top-of-wall pins, horizontal and vertical straps, and in the case of thin walls strategically placed "center cores" that are of small diameter (no more than two inches).

I was involved with both the testing at Berkeley and at Stanford. I have used the stability-based retrofit philosophy to design appropriate, minimally invasive retrofits of several historic and older adobes in California, including the Salvador Vallejo and Leese-Fitch adobes in Sonoma, CA, the Shafter Court House adobe in Shafter, CA, the O'Hara adobe in Los Angeles County, the Lydecker adobe in Aptos, CA, the Minnich adobe in Santa Barbara, and currently, Mission San Miguel in San Miguel, CA. There are a few other engineers in the State who are currently practicing in the area of adobe building seismic stabilization and retrofit, and to my knowledge all are comfortable with the concept of minimal intervention. The WJE designer clearly is not (I attended a presentation by the designers of the stabilization in May at the SismoAdobe2005 conference in Lima, Peru).

This problem should have been dealt with in a peer review process. This is one of the methods by which an inexperienced engineer designing something unusual for the first time can learn what is appropriate and what is not. I strongly recommend that the proposed design have a complete peer review by a knowledgeable engineer, and that the "center core" design be revisited. If you have questions, please feel free to contact me.

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